

REMARKS

The Office Action mailed April 9, 2004 has been received and its contents carefully noted. Reconsideration of this application is respectfully requested in view of the foregoing amendments and the comments set forth below.

By this Amendment, a new drawing sheet is submitted illustrating Fig. 11 that schematically shows a production process controlled by a laser scanner measuring system according to the invention; the specification is revised to describe new Fig. 11; and claims 14, 18-19, 21, 27, 29, 34 and 36 are amended. Accordingly, claims 14-23 and 25-41 are pending in the application, with claims 14 and 29 being the independent claims.

Claims 19, 21, 30 and 34 were objected to because of the informalities listed at the bottom of page 2 of the Action. By the foregoing amendments to the claims, these claims have been amended adopting the Examiner's suggestions. In addition, claim 36 was amended for consistency as in claims 19, 21 and 34. Accordingly, it is believed that the listed objections have been overcome and withdrawal of these objections is respectfully requested.

Claims 14-23 and 25-41 were rejected under 35 U.S.C. § 112, second paragraph, for the reasons set forth in paragraph 5 of the Action. With respect to Action's query concerning how a photo detector is disposed "for a receiver beam path", claims 14 and 29 have been amended to state "a photo detector disposed...in a path of a receiver beam." Line 8 of claim 14 refers to the receiver beam, which is the beam received after scanning an object. The dark field stop is disposed ahead of the photo detector, which are both disposed in the receiver beam path as positively stated in claim 14. Thus, it is respectfully submitted that it is clear that the photo detector and the dark field stop can be positioned in the focal plane of the optical receiver system when the dark field stop is ahead of the photo detector as clearly stated in claim 14. This is

possible as a focal plane in reality is not infinitely thin, but defines a region in which both elements can be positioned one behind the other as described in the originally-filed specification. Accordingly, it is believed that claim 14 is fully definite under 35 U.S.C. § 112, second paragraph.

With respect to claim 18, the “scanner unit” has been amended to read the – emitter – unit as described in the originally-filed specification. There is sufficient antecedent basis for the recitation “the scanning beam” in line 2 of claims 21 and 34 as the same is recited in claim 14, line 8 and claim 29, line 5. With respect to the antecedent basis for “the scanning direction” in claims 20-22 and 34-37, claims 19, 21, 34 and 36 have been amended to recite “a scanning direction”. Accordingly, it is believed that the lack of antecedent basis referred to in claims 18, 20-22 and 33-37 has been corrected so that the claims are fully definite under 35 U.S.C. § 112, second paragraph.

Claim 27 was rejected because it was unclear what the “outside space” means. By the foregoing amendments to claim 27, it should be clear that the term “outside space” refers to space outside the combination unit. With respect to the phrase “a reference beam is realized”, the originally-filed specification describes this embodiment on page 9, lines 11-24. In addition, the “beam path” of claim 27 is referring to the receiver beam path and the “at least one detector element” refers to “the photo detector” of claim 14. Accordingly, it is believed that claim 27 is fully definite under 35 U.S.C. § 112, second paragraph.

Claim 28 was rejected because “it is unclear what method/process applicant is intending to encompass.” Claim 28 is directed to a laser scanner measuring system and not a method or a process. According to claim 28, the measuring system is adapted to control a production process. The production process controlled by the measuring system may be the production

process of the object, which is measured by the laser scanning measuring system. Since the production steps of such an object are dependent on the measured object, one cannot define specific production steps of this process. Accordingly, claim 28 is directed to a laser measuring system that is adapted to control a production process by the laser scanning measuring system and not the production process itself. It is believed that claim 28 is fully definite as to the scope of the laser scanner measuring system that is adapted to control a production process.

With respect to claim 29, the Action indicates a lack of antecedent basis for “the beam” in line 10. As with claim 14, claim 29 has been amended to refer to said receiver beam where a receiver beam is recited in line 7 of claim 29. In view of the foregoing amendments, it is believed that claims 14-23 and 25-41 are fully definite under 35 U.S.C. § 112, second paragraph, and withdrawal of that rejection is respectfully requested.

Claims 29-30 and 33-39 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,693,953 to Pryor, et al (hereinafter referred to as “Pryor”) as explained in paragraph 7 spanning pages 4-6 of the Action. Claims 31-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Pryor in view of U.S. Patent No. 4,432,648 to Musto, et al (hereinafter referred to as “Musto”) as explained in paragraph 9 of the Action. These rejections are respectfully traversed.

Pryor is directed to a method and apparatus for electrooptically determining the dimension, location, and attitude of objects. This technique is referred to as optical triangulation in column 1, lines 32-38 and column 3, lines 11-19 of Pryor. As shown in Fig. 3 of Pryor, the apparatus performing the triangulation sensor does not form or include any laser scanner measuring system, which is the subject matter of the present application as Pryor employs a triangular sensor to determine the dimension, location and attitude of part surfaces.

Triangulation sensors do not include any scanning function of the object as triangulation is a different measuring principle. Triangulation is based on static measurements of distances from which distances the contour of an object can be derived (see column 3, lines 11-19 of Pryor). Laser scanner measuring systems use time dependent changes of detection signals (with or without additional position information) to get the measuring information. The scanning associated with laser scanner measuring systems is described on page 1, lines 7-25 of the originally-filed application. It is respectfully submitted that Pryor does not disclose an emitter unit having a laser, a beam deflector unit and an optical emitter system, which define a scanning beam path as well as a scanning plane of a scanning beam emitted from the emitter unit as claim 29 now recites.

That is, the apparatus of Pryor does not include an emitter unit defining a scanning plane, e.g. by means of a rotating beam deflector unit. The alleged emitter unit of Pryor does not comprise any beam deflector unit at all. As described in column 4, line 61-63 of Pryor, Fig. 3 discloses a laser (33) pockels cells (32), an analyzer (34) and a lens (31) which clearly define a static beam path, but not a scanning plane as required by independent claim 29. Further, the pockels cells do not have any deflecting function, but only adapt the optical power level of the laser beam as explained in column 5, lines 46-48 of Pryor. Therefore, the laser scanner measuring system of claims 29-30 and 33-39 are not anticipated by Pryor and withdrawal of that rejection is respectfully requested.

Claim 29 is further amended to emphasize the scanning function of the claimed elements by reciting “a scanner unit formed by an emitter unit having a laser, a beam deflector unit and an optical emitter system, which define scanner beam, as well as a scanning plane of a scanning beam emitted from said emitter unit”. It is respectfully submitted that Pryor does not have a

scanner unit, which clearly ties in the scanning function of the claimed laser scanner measuring system. Nowhere does Pryor disclose, teach or even suggest a scanner unit as it is directed to a triangulation measurement where the laser hits the object and information is reflected back to a photo diode array as described in column 3, lines 11-19 of Pryor. It is respectfully submitted that one of ordinary skill in the art would understand that Pryor is directed to a static measurement system while the claimed invention is directed to a scanning (dynamic) measurement system that requires a different assembly. Accordingly, a person of ordinary skill would not mix the features of these two different kinds of apparatuses. In view of the different measuring principle taught by Pryor, it is believe that the claimed invention cannot be derived from the document alone nor from a combination of that document with other documents.

Musto was cited for its teachings of retro reflectors (28, 53 and 54). Nowhere does Musto disclose, let alone teach or suggest, the claimed scanner unit formed by an emitter unit having a laser, a beam deflector unit and an optical emitter system which define a scanning beam path and a scanning plane of a scanning beam emitted from the emitter unit as recited in claim 29. Accordingly, claim 31-32 are believed to be patentable over any combination of Pryor and Musto.

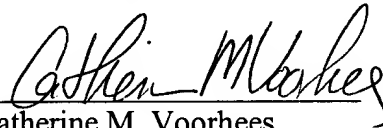
In that claims 14-23 and 25-28 were solely rejected under 35 U.S.C. § 112, second paragraph, and the foregoing amendments clarify these claims as discussed above, it is believed that claims 14-23 and 25-28 are allowed over the prior art of record. In addition, claims 29-41 are believed to be fully definite under 35 U.S.C. § 112, second paragraph, and are not disclosed by the prior art of record as discussed above. Accordingly, it is believed that claims 29-41 are allowable over the prior art of record.

All of the stated grounds of rejection have been properly traversed, accommodated or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all previously outstanding rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

A request for the necessary extension in the period for filing this response, as well as a check in payment of the applicable extension fee are attached.

If the Examiner believes that additional issues remain and that an interview with Applicant's representative would be helpful, the Examiner is invited to call the undersigned at the number listed below.

Respectfully submitted,



Catherine M. Voorhees
Registration No. 33,074
VENABLE LLP
P.O. Box 34385
Washington, DC 20043-9998
Telephone: (202) 344-4000
Telefax: (202) 344-8300

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